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August 22, 2014

VIA ECFS **EX PARTE**

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

Re: Docket 18-22

Dear Ms. Dortch:

The purpose of this filing is to convey our views on Docket 18-22.

Since 2007 we have been writing in our blog *SpectrumTalk*[1] about Section 7 and how the Commission has repreatedly ignored it since President Reagan signed it into law in 1983. We are attaching a compilation of these blog posts to this filing. As we have said in the past, Section 7 is not a perfect law. However in the decades since it was passed the Commission has never asked Congress to amend it, it has just ignored it under multiple chairmen from both parties. We believe that some legislative changes would be useful to clarify the intent of the law and the Commission's abilities to implement its goals.

We recall vividly being with a client several years ago who was interviewing top communications lawyers to represent them with a new technology that needed nonroutine FCC approval before it could be marketed. This technology involved "green field" spectrum that had the proper allocation for the proposed use. The client ask one lawyer it interviewed whether they should claim Section 7 status since the technology involved was not used at all in the commercial sector at that time. The prominent spectrum lawyer immediately replied that they should never mention Section 7 to the Commission because if they did the Commission would "punish" them by delaying consideration more than usual!

A petition for this client was later filed that contained no mention of Section 7. As expected no opposition was received in comments on that petition but the Commission

[1] http://www.marcus-spectrum.com/Blog/files/category-section-7.html

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made no further action on that petition for almost 4 years when it then folded it into another proceeding.

The filing of this petition and subsequent events are all on the public record. Potential investors in any new spectrum technology can see how the petition was ignored and probably can find out that our client canceled the project after 2 years, fired the staff involved, and swore never again to invest in R&D involving technology requiring nonroutine FCC approval for market access!

Had the client been an entrepreneurial firm, it would had just folded with disillusioned staff and investors. (In this case it was a multibillion dollar firm whose main focus was not FCC-regulated technologies, but it still could not afford to fund a project year-after-year waiting for quixotic FCC deliberations.)

Supporting capital formation for entrepreneurial firms does not need a positive answer from FCC for every proposed new technology subject to FCC jurisdiction, but it does need some transparency with respect to expected deliberation times. While the Commission has made admirable progress in implementing 5G and ATSC 3.0 in timely ways, its limited resources have made much slower progress on other technologies not advocated by major incumbents. Section 7 was supposed to level this playing field. To date, it hasn't.

Why was Section 7 Passed?

We recall the history of why Congress passed these provisions: the shabby treatment FCC gave in the early 1980s to a then promising new land mobile technology called "amplitude compandored singe sideband"/"ACSB". At the time cellular radio was nascent and was not expected to be a large spectrum-based industry. Private Land Mobile Radio, Part 90, was a spectrum-based large industry and its equipment market was dominated by the Motorola Corporation that existed at that time (very different from any firms that use the "Motorola" name today) that dominated this market it had pioneered the same way IBM dominated the computer market at the time (which it had also pioneered). Motorola's influence at FCC in spectrum policy t*hen* was immense and comparable to CTIA's influence now. It appeared to many that Motorola used that its influence at FCC at that time to block competitive innovative technologies that might threaten its market hegemony and long range plans.

In the public online domain little exists about the ACSB saga in Dockets 80-440 and 84-279, but a brief description can be found in an NTIA report from the period.[2] While FCC finally gave this technology access to a tiny amount of spectrum several years later, it was not enough to support a viable business. Eventually alternative digital voice technology proved to be more efficient.

[2] NTIA/ITS, "Assessment of Narrowband Modulation Technologies for Government Land Mobile Operations", NTIA Report 84-156 , August 1984 at p. 1-2 (https://www.its.bldrdoc.gov/publications/download/84-156_ocr.pdf)

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Experimental License Applications Should be Covered by Section 7

The NPRM is silent on whether experimental licenses under Part 5 of the Commission's Rules are covered by the proposed rules. We urge that they should be covered at least with respect to the "burden test" of §7(a). The next section discusses a specific recent example of where the burden test appears not to have been considered in an FCC experimental license application.

If the Commission agrees that §7(a) applies to experimental license applications, we urge it to find a simplified alternative to the proposed § 1.6003,6006 procedures. While these may be appropriate for both rulemaking procedures for with new technology and award of nonexperimental licenses, they are too complex and time consuming for experimental licenses applications which are usually adjudicated in much less than 1 year and for which the terms of §7(b) are not really relevant.

In the case of experimental licenses we urge the Commission to amend the proposed rules to allow a quick staff level determination of eligibility for §7(a) burden test issues and limit the multistep process for rulemaking and nonexperimental licenses where §7(b) treatment is sought. We note that experimental license issues have been and are currently almost all resolved under staff delegated authority of §0.241(c)[3] with very limited Commission level oversight.

Role of NTIA in Section 7 Deliberations

The Commission's spectrum policy partner, National Telecommunications and Information Agency/NTIA is *never* mentioned in this NPRM. FCC spectrum policy decisions are impacted by the bifurcation of spectrum policy authority in Section 301 and 305 of the Communications Act of 1934, as amended ("the Act") as well as the delegations to NTIA in Title IX of the Act. FCC and NTIA have agreed in a 2003 Memorandum of Understanding[4] (which replaced a similar 1940 MOU) on their relative roles in spectrum policy. In the MOU the agencies agree to give the other notice of spectrum actions "that could potentially cause interference" to the other and to "resolve technical, procedural, and policy differences by consensus whenever possible". Note however, that is an interagency agreement and is not a law. It is not even a regulation.

[3] 47 C.F.R. §0.241(c) "The Chief of the Office of Engineering and Technology is delegated authority to administer the Experimental Radio licensing program pursuant to part 5 of this chapter."
[4] Memorandum of Understanding Between FCC and NTIA, January 31, 2003 (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-230835A2.pdf)

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The second sentence of Section 7(a) is never explicitly mentioned in the NPRM and reads:

> Any person or party (other than the Commission) who opposes a new technology or service proposed to be permitted under this chapter shall have the burden to demonstrate that such proposal is inconsistent with the public interest.[5]

While we at MSS are not lawyers, doesn't this clear statute impact both the 2003 MOU and any new rules that might ultimately be adopted in this proceeding? Isn't NTIA included in the phrase "(a)ny person or party (other than the Commission)"? This sentences shows clear Congressional intent that parties outside the FCC who object to a new technology must face a "burden test". We believe that new rules should clearly codify that NTIA can not just object to bilateral coordination in matters of new technology, NTIA must take the burden of explaining why the proposed technology is not in the public interest.

This has not been consistent NTIA practice in the past, especially for technologies which are not been promoted by large industry players or spectrum incumbents.

For example consider the recent experimental license problem faced by a public research university, The University at Buffalo, State University of New York/"Buffalo" in File 0753-EX-ST-2018 -- a client of MSS. This resulted in the Commission issuing radio call sign WM9XXI in two licenses, one issued on May 20, 2018 and an updated one on July 11, 2018. Both of these are attached to this filing. This application was for pure research on millimeterwave propagation and on high speed data transmission at 220-260 GHz in outdoor environments using a transmitter on loan from a federal agency. Transmitters in such millimeterwave bands are not in serial production so unless millions of dollars are available to commission a unit design, research with modest budgets must focus on frequencies for which transmitters are available. While amateur radio operators may find *any* use of a novel band interesting, researchers in millimeterwave needs large bandwidth to take advantage of the frequencies for either high speed data or broadband probing of physical materials to observe their structure.

In applying for this licenses Buffalo included in its supplemental statement and explicit request for treatment as a new technology under §7 as well as the information required by §5.85(a)(2) of the Commission's Rules for use of bands with passive allocations. While the May 20th license covered on its first page "220-260 GHz", Special Condition 3 on the next page stated:

> "Operation is not authorized to transmit any frequencies in the following bands:
> a. 226-231.5 GHz
> b. 250-252 GHz"

[5] 47 U.S.C. 157(a)

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Thus the originally requested 40 GHz of contiguous spectrum was cut down to 18.5 GHz of contiguous spectrum (231.5-250 GHz) which seriously compromised the goals of this experiment. While there was no explanation of this change provided by the Commission, previous experience showed that NASA was likely the problem since both were passive bands protected by Allocation Table footnote US246 and there are no radio astronomy facilities above 100 GHz east of the Mississippi River. While the two bands listed are not listed in Appendix B of the Docket 18-21, "Spectrum Horizons" NPRM that is described as a "list of current and proposed passive satellite operations above 95 GHz ... provided by the National Aeronautics and Space Administration", a little research with Google showed that the NASA Aura satellite[6] observes ozone and other environmental factors in these bands. But there is only one such satellite which is in a sun synchronous orbit so it passes over a given location the approximate same time each day. In other words it is not always over Buffalo, NY.

In issuing the restriction in the May 20th did the Commission consider the "burden test" of §7(a)? Was the prohibition of the 2 bands absolutely necessary or even justified by NASA to NTIA and by NTIA to FCC? We hope senior FCC leadership asks these questions.

When we pointed this issue out to FCC staff we suggested a win/win compromise: Allowing transmissions to be for only 2 hours a day at time selected by NASA. On July 11th the license was reissued with the restriction on the 2 bands deleted and replaced by the following new restriction -- which was acceptable to the applicant:

> "The University of Buffalo shall not transmit in the 226-231.5 GHz or 250-252 GHz frequency bands when the NASA Aura spacecraft (NORAD designation 28376 or international spacecraft ID 2004-07-15) is within horizon-to-horizon view of the testing location."

This confirmed our suspicion that Buffalo just had to avoid transmissions when the NASA satellite was visible to prevent interference. But in the second license was a new restriction:

> "The University of Buffalo shall be aware that NASA will not concur on any requests for operational use of the 226-231.5 GHz or 250-252 GHz frequency bands; this concurrence for experimental operation in a passive allocation is being provided on a one time only basis."

We do not believe that this restriction complies with either the spirit and letter of §7(a) or with the provisions of §5.85(a)(2) -- which presumable NTIA agreed with in interagency coordination under the FCC/NTIA MOU when this provision was adopted in 2015[7]. This condition appears to forbid Buffalo, and only Buffalo, from ever doing experiments in these two bands after the expiration of the current license regardless of whether such experiments have *any* harmful interference impact or FCC licensed

[6] https://aura.gsfc.nasa.gov/about.html
[7] 80 FR 52414

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systems, federal government systems, or any foreign operated systems. Did NTIA or NASA meet the burden test of §7(a) in asking the Commission take this action? Did the Commission review the NTIA or NASA request and make a burden determination before placing such conditions on a license it issued?

We urge the Commission to amend the proposed § 1.6003(c) to point out explicitly that it applies to private entities, state and local governments, as well as federal entities. We also request that the 2003 FCC/NTIA MOU should be amended to reflect this interpretation that NTIA under current legislation has a positive burden it must pass when objecting to a new technology and that saying that an IRAC member objects is not adequate.

NTIA Administrator Redl recently has stated that "Dynamic Protection Areas will replace static exclusion zones that principally cover coastal areas in order to protect shipborne radars, as well as protect other federal equities such as radio-quiet zones, including the ITS-managed Table Mountain in Colorado."[8] (Emphasis added.) Therefore the sharing of federal government spectrum even in radio-quiet zones should be considered solely on whether the proposed experiment will cause interference during the terms of its license and under the conditions of its license and the statutory burden test of §7(a) is appropriate.

Section 7 and Nonspectrum Technologies

While not explicitly stated in the NPRM, the proposals seems to all deal with spectrum technologies and their regulation under Title III of the Act. §7 is in Title I of the Act and has no indication that its provisions are limited only to Title III, therefore we urge the Commission to find that its applies to all actions of the Commission under the Act, not just Title III actions on spectrum matters.

The Commission considered innovative nonspectrum technology issues in the NOI in Docket 98-94. In that proceeding it found that §7 was applicable to "a broad range of issues relating to the Commission's regulation of technology testing."[9]

[8] NTIA Spectrum Policy Symposium Remarks of Assistant Secretary David J. Redl, June 12, 2018 (https://www.ntia.doc.gov/speechtestimony/2018/remarks-assistant-secretary-redl-ntia-spectrum-policy-symposium)

[9] *Notice of Inquiry*, Docket 98-94, July 11, 1998 at para. 1 (Oddly this old document has two para. 1's, this refers to the second one.)

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We urge the Commission to codify in rules adopted in this proceeding the following "policy directives" adopted in the Policy Statement in Docket 98-94:

> "1) The Commission will consider applications and waiver requests associated with experiments on an expedited basis;
>
> 2) The Commission will take into account the benefits of experiments in our evaluation of the public interest when reviewing applications for experiments that are small-scale and limited duration; and
>
> 3) The Commission will promote coordination among Bureaus and Offices to expedite approval of experimental applications that involve convergent technologies."[10]

While almost twenty year old decision is available in the archives of past FCC actions, placing these directives in ongoing Commission Rules would emphasize the agencies commitment to the goals of §7.

Conclusion

We commend the Commission for beginning this proceeding that can level the playing field for technical entrepreneurs and increase regulatory transparency at FCC.

Sincerely,

/S/

Michael J. Marcus, Sc.D., F-IEEE
Director

cc:
Michael Carowitz
Erin McGrath
Will Adams
Umair Javed
Julius Knapp
Jamison Prime
Paul Murray

[10] *Policy Statement,* Docket 98-94, April 2, 1999 at para. 4 (https://docs.fcc.gov/public/attachments/FCC-99-53A1.pdf)